T-06-1 – "Avian & Herpetofaunal Surveys – ULL 1"

Abstract: This grant included 2 planning projects. The unifying theme of the two projects was to gather information via baseline surveys essential to the development of the statewide *Wildlife Action Plan.* The objectives were to estimate the effects of selective timber harvest on amphibians, reptiles, and birds on four Wildlife Management Areas (WMA). The 2 projects funded within this grant included:

1. *Abstract*: "The Effects of Selective Timber Harvest on Amphibians and Reptiles in Bottomland Hardwood Forests of Louisiana.".

   Many recent studies have examined the effects of timber harvest on wildlife in order to develop forest management strategies that balance the need for timber production and harvest with the conservation of biodiversity. Most studies have focused on mammals and birds, often neglecting the crucial roles of amphibians and reptiles in many ecosystems. Of the relatively few studies that have investigated herpetofaunal communities in managed forests, most have examined clear-cuts and have not occurred in bottomland hardwood forests. [This study compared] the relative abundances of herpetofauna in selectively harvested and unharvested stands of bottomland hardwood forest. [R]ecently harvested stands (less than five years after harvest) and older harvests (10-15 years after harvest) [were compared] with more mature stands to investigate the immediate response of herpetofauna to timber harvest and how this response may change over time. [A]nuran calling surveys, visual encounter surveys, and funnel trapping along drift fences [were used]. Although…differences in forest structural attributes such as canopy cover and tree basal area [were observed], …few relationships between these features and the relative abundance of herpetofauna [were observed]. Abundances of salamanders and Woodhouse's Toad (*Bufo woodhousii*) were lower in areas affected by recent timber harvest. [G]reater calling activity of Cope's gray treefrog (*Hyla chrysoscelis*) [was observed] in recently harvested stands than older harvests. [This] research suggests that the response of herpetofauna to selective harvesting of bottomland hardwood forests may be less dramatic than [for] clear-cuts. [Despite] significantly lower species richness in recently harvested stands than in mature ones, [there is] little evidence that selective harvests are resulting in large scale changes in herpetofaunal assemblages comparable to those produced by clear-cutting. Further, [there were] few differences between recently harvested stands and older harvests (10-15 years old), suggesting that shifts in herpetofaunal species abundances following selective harvest of bottomland hardwood forests are transitory.

   (**Abstract paraphrased from**: "The Effects of Selective Timber Harvest on Amphibians and Reptiles in Bottomland Hardwood Forests of Louisiana*" in* Amphibian, Reptile, and Breeding Bird Communities of Bottomland Forests on the Red River, Three Rivers, Dewey Wills and Big Lake Wildlife Management Areas: An Assessment of the Influence of Selective Harvests*;* Leberg, P., B.Lorenz, J. Heltzel, and B. Moon; University of Louisiana – Lafayette, Lafayette, LA; 185 pp.)

2. *Abstract*: "The Effects of Selective Logging on Songbird Populations in Bottomland Hardwood Forests in Louisiana.".

   [This study] examined the influence of selective timber harvesting on breeding bird abundance, nest survival, and brood parasitism in selectively harvested bottomland hardwood forests in Louisiana. [It] compared bird abundance among recent harvests (1-5 years old), older harvests (12-18 years old), and mature stands (> 30 years since harvest), and evaluated nest survival in older harvests and mature forests. Four species were more abundant in mature forests than in recently harvested stands: Acadian Flycatcher, Prothonotary Warbler, Red-eyed Vireo, and Red-shouldered Hawk. With the exception of Acadian Flycatcher, older harvests and mature forests supported similar numbers of the species that are typically found in mature bottomland hardwood forests. Older harvest supported higher densities of gap-dependent species, including Swainson's Warbler and Hooded Warbler, than were found in mature stands or recent harvest. Yellow-billed Cuckoo and Kentucky Warbler were more abundant in both recent and older harvests than in mature stands. Recent harvests supported higher densities of 6 early-successional species than were found in either older harvests mature forests. [There were] no differences between rates of nest survival or brood parasitism in older harvests and mature forests, with the exception of Yellow-billed Cuckoo. Cuckoo nests in mature forests were more likely to survive than nests in older harvests. Timber harvesting had a strong influence on the abundance of 20 species of breeding birds in bottomland hardwood forests, but did not appear to influence breeding productivity.

   (**Abstract paraphrased from**: "The Effects of Selective Logging on Songbird Populations in Bottomland Hardwood Forests in Louisiana" *in* Amphibian, Reptile, and Breeding Bird Communities of Bottomland Forests on the Red River, Three Rivers, Dewey Wills and Big Lake Wildlife Management Areas: An Assessment of the Influence of Selective Harvests*;* Leberg, P., B.Lorenz, J. Heltzel, and B. Moon; University of Louisiana – Lafayette, Lafayette, LA; 185 pp.)

This grant was closed 30 June 2005. **For more information** about State Wildlife Grant T-6, or to obtain copies of interim or final reports, please contact the State Wildlife Grant Coordinator, LDWF Fur & Refuge Division.